production. In the case of silver, of which the world in 1898 produced 165,000,000 ounces, Mexico produced 34·4 per cent., the United States 33 per cent., and Australasia 7·3 per cent. Less than half the world's supply was obtained from silver ores. The remainder was obtained from the metallurgical treatment of other ores in which silver was an accessory constituent. Since those ores would continue to be mined for the other metals they contained, a steady supply of silver was assured, whilst a slight rise in the price of silver would enable many deposits of true silver ores now untouched to be worked.

In a paper read before the Society of Arts in 1854, Mr. J. K. Blackwell stated that the world's production of pig iron then amounted to 6,000,000 tons. Of that quantity the United Kingdom produced 50 per cent., France 12·5 per cent., the United States 12·5 per cent., and Germany 6·6 per cent. In 1898 the world's production had risen to 35,741,000 tons, of which the United States produced 32·7 per cent., the United Kingdom 24·1 per cent., Germany 20·6 per cent., and France 7·1 per cent. The relative position of the different countries from a mining point of view is better shown by the statistics of iron ore production. The world's production in 1898 was 73,670,000 tons, of which the United States produced 26·2 per cent., Germany 21·6 per cent., the United Kingdom 19·3 per cent., Spain 9·7 per cent., France 6·2 per cent., Russia 5·6 per cent., Austria-Hungary 4·5 per cent., and Sweden 3·1 per cent. The more important iron ore deposits now worked are at the mines of Lake Superior, Bilbao, Southern Spain, the Ural, Styria, Dannemora, Grängesberg and Gellivare.

With regard to copper, the rapid decadence of British copper mining was owing to copper in the Cornish mines having given place to tin as greater depths were reached, and to these great depths and the quantity of water encountered rendering competition with the American and Spanish deposits impossible. There are, however, large areas unexplored, and many mines worth re-opening should the price of copper rise, and should the disadvantages experienced in Great Britain make themselves felt abroad. Owing to the increased demand for copper caused by the rapid extension of the applications of electricity, a further rise in price is not improbable. The world's production of copper in 1898 was 424,126 tons, of which amount the United States produced 55·1 per cent., Spain and Portugal 12·6 per cent., Japan 5·9 per cent., Chili 5·8 per cent., Germany 4·9 per cent., Australasia 4·2 per cent., Mexico 2·5 per cent., Canada 1·9 per cent., Cape Colony 1·6 per cent., and Russia 1·4 per cent. Last year the world's copper production was about 474,000 tons. The Anaconda Mine produced 11 per cent. of the world's output, and among other important copper mines are those in Arizona, in the Lake Superior district, in the South of Spain (Rio Tinto and Tharsis), and Portugal (San Domingos), in South America, in Japan; at Mansfeld, and at the Rammelsberg, in Germany; at Falun, in Sweden; and in Australasia (Mount Lyell, Tasmania; Moonta and Walleroo, South Australia; and Great Cobar, New South Wales).

CONFERENCE OF DELEGATES OF CORRESPONDING SOCIETIES OF THE BRITISH ASSOCIATION.

THE first meeting of the Conference took place at Bradford on Thursday, September 6.

The report of the Committee, a copy of which was in the hands of every delegate present, was taken as read. The chairman then remarked that the chief subject for discussion that day consisted of the following resolutions, which had been brought forward by the Yorkshire Naturalists' Union:—

(1) That the Conference of Delegates be allowed to meet on the first day of the British Association meeting, and make their own arrangements for subsequent meetings and order of business.

(2) That it is desirable, in order to make the discussions of the Conference of Delegates more useful to the local societies, that they should have the power of deciding the subjects for discussion at the meetings of the Conference, and it is suggested, therefore, that a circular be sent by the Committee every year to each of the corresponding societies asking them to send a list of subjects for discussion (not more than two or three) at the forthcoming meetings. The Committee then to send to the corresponding societies a schedule containing the titles of all the subjects proposed for discussion, asking each society to mark such of these subjects as it deems most desirable to discuss at the Conference meetings. On receipt of this information the Committee will then arrange the list of subjects in order of precedence as indicated by the support given to each subject by the societies; and a copy of this should be sent to the delegates or Societies as an agenda paper before the first meeting of the delegates.

After a long discussion, it was resolved that the meetings of the Conference be held on Thursday and Tuesday, as heretofore.

Copyright.—Mr. Walton Brown remarked that some time ago Lord Monkswell had introduced a Bill into Parliament dealing with copyright, but so far as scientific societies were concerned the Bill ignored some important points. There was no provision that a society should have any copyright in the publication of its own transactions. He believed that societies could claim copyright if they paid their contributors. He thought that the Conference should ask the Corresponding Societies Committee to take steps to have an amendment proposed recognising the copyright of scientific societies in their publications.

Prof. Henry Louis pointed out that the British Association expressly disclaimed copyright for themselves; and the Rev. J. O. Bevan urged that a special case should be prepared and submitted to counsel for a legal opinion. Mr. Walton Brown's views were unanimously accepted by the meeting, which then adjourned.

At the second meeting of the Conference an address on dew-ponds was given by Prof. Miall. In the first place, Prof. Miall noticed the mention of dew-ponds by Gilbert White ("Natural History of Selborne," Letter lxxi.), and more recently by the Rev. J. C. Clutterbuck in a prize essay on "Water Supply." Both writers described them as existing on the tops of chalk hills, and Mr. Clutterbuck says that at the selected spot an excavation is made from 30 to 40 feet or more in diameter, and from 4 to 6 feet deep. The bottom is covered with clay mixed with lime, and a layer of broken chalk is placed over the clay with lime to prevent injury to this impermeable lining. Water is then introduced by artificial means. If there is a fall of snow this is collected and piled in the pond. Ponds so made have been known never to become dry during periods of twenty or thirty years. They are most common on the chalk hills of Sussex and Hampshire, and are also found in Berkshire and Wiltshire. But on the chalk of Hertfordshire, Bedfordshire, Lincolnshire and Yorkshire there are few or none.

As dew-ponds often occupy the summit of a ridge so precisely that they can have no collecting ground worth mentioning, and as any springs are hundreds of feet below, it becomes an interesting question why they retain more or less water when the low-level ponds of the same district have become dry, though they supply water for large flocks of sheep.

Prof. Miall then reviewed the evidence bearing upon the question whether these ponds are mainly dew-ponds or rain-ponds, and quoted the experience of Mr. Clement Reid, who found that at the end of a long drought the best dew-ponds were sheltered on the south-west side by an overhanging tree, or the hollow was sufficiently deep for the south bank to cut off much of the sun. The depth or shallowness of the water did not appear to make so great a difference as might be expected.

It was, however, evident that many additional observations were necessary before this question could be settled. It was desirable that the temperature of the water of the pond at various depths, as taken hourly through a summer night, should be noted, and that many other thermometrical observations should be made. He concluded by asking that residents in the south-eastern counties would investigate the matter.

Mr. Clement Reid had been working for some years in a country where dew-ponds were abundant, but did not think they were formed in the scientific manner pretended by their makers. In times of drought some dried up and others did not, the fittest surviving. Farmers were continually making new ones, and sometimes, by accident, hit on a satisfactory site It was unfortunate that they were almost entirely without meteorological observations on the high ground where dew-ponds might be seen.

Mr. Hopkinson noted the difficulty of ascertaining the amount of water contributed to the pond by dew. A distinction must be drawn between dew and mist. There were scarcely any rain gauges on the high ground where dew-ponds existed, though probably more rain fell there than in the valleys. He did not know of any dew-ponds in Hertfordshire. Mr. J. Brown and Mr. W. Gray stated that there were no dew-ponds in Ire-

land. Mr. W. M. Watts considered that the amount of dew could hardly exceed 1½ inches per annum, and Mr. Barrowman was not aware of the existence of dew-ponds in Scotland. Mr. G. P. Hughes said that dew-ponds were unknown in his district (Berwickshire). He thought they might prove useful in Australia and South Africa, dry countries where the dews were heavy. The Rev. E. P. Knubley noted their existence in Wiltshire, and Prof. H. Louis thought that the exact composition of the water in these ponds was one of the essential points to be examined. Prof. Potter noted the existence of ponds in Warwickshire, Suffolk and the South of Portugal, which he thought might prove analogous to dew-ponds.

Prof. Miall referred to various points which had been raised in the discussion. Ponds to be classed with dew-ponds must not be fed by springs or surface drainage. He had hitherto found that ponds in the Midland counties, supposed to be analogous to dew-ponds, were not really so. He hoped that the corresponding societies would take up the subject.

Section C.—Mr. Monckton, representing Section C, drew attention to the labours of two committees wishing to obtain the co-operation of the corresponding societies in their work, the Geological Photographs Committee and the Erratic Blocks Committee. The secretary of the Geological Photographs Committee was Prof. W. W. Watts; the secretary of the Erratic Blocks Committee Prof. P. F. Kendall.

Section D.—The Rev. E. P. Knubley, representing Section D, was anxious that the corresponding societies should go on observing the migration of birds; also the food-supply of birds and the life-histories of insects.

Section H.—Mr. E. Sidney Hartland, representing Section H, brought before the Conference the work of the Anthropological Photographs Committee. That committee wished to collect photographs of objects of anthropological interest which were now scattered over the country, and almost unknown outside their own localities. They wanted photographs of prehistoric stone monuments and implements, of primitive pottery and of objects connected with local superstitions. The collection would be placed in the rooms of the Anthropological Institute. The secretary of the committee was Mr. J. L. Myres.

The Rev. J. O. Bevan urged the committees of the corresponding societies to lay before their members the desirability of a systematic survey of their counties with respect to their ethnography and ethnology, archæology, folklore, meteorology, botany, ornithology, &c. This kind of work was being done in part at various places. The committee of the British Association which had been concerned with ethnography and ethnology had been dissolved at the Dover meeting. He hoped that the local societies would take up the work, and inform the Corresponding Societies Committee what was being done.

After a few remarks from Mr. Hembry, who suggested that at future meetings sectional matters should be taken before the reading of a paper on any special subject, the meeting came to an end.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Vice-Chancellor announces that Mr. W. W. Astor has contributed the sum of £10,000 to the University Benefaction Fund.

Mr. F. G. Kenyon, assistant keeper of the manuscripts in the British Museum, has been appointed Sandars Reader in bibliography.

Dr. Haddon, F.R.S., has been appointed University lecturer in ethnology, and Mr. J. J. Lister, F.R.S., to be demonstrator of comparative anatomy.

A University lectureship in experimental physics is vacant by the resignation of Prof. Wilberforce. Applications should reach the Vice-Chancellor by Saturday, November 3.

The portrait of Charles Darwin, now in the Philosophical Library, has been lent for the exhibition of the works of Sir W. B. Richmond, to be held in the New Gallery.

MR. J. A. MCCLELLAND, M.A., has been appointed to the chair of Natural Philosophy in the University College, Dublin, which was rendered vacant by the death of Prof. Preston. Mr. McClelland is a native of North Ireland, and studied physics under Prof. Anderson at Queen's College, Galway. After graduating M.A., he went to Cambridge and continued his studies in physics under Prof. J. J. Thomson, obtaining the B.A. (Research) degree for his original work in the Cavendish Laboratory. In Ireland Mr. McClelland gained an "1837 Exhibition" Science Scholarship, and later a Junior Fellowship of the Royal University of Ireland.

A NOTEWORTHY announcement in the Calendar of University College, Bristol, is that a clinical and bacteriological research laboratory has been established at the college, under the direction of Prof. A. F. Stanley Kent. The value of such a laboratory in a port like that of Bristol cannot be over-estimated, and the City authorities should show their appreciation of it in a practical way. The laboratory will not only provide a means of obtaining trustworthy information and reports upon pathological material, but will also give medical men an opportunity of carrying out bacteriological investigations. Should plague ever appear in Bristol, as it has done at Glasgow, the City authorities will know the value of the laboratory now established at their University College. At present the college does not receive nearly so much local support as some of the other provincial colleges, and there seems to be little hope that there will ever be a West of England University with its centre at Bristol, analogous to the University of Birmingham.

IN the course of her able and suggestive address at the opening of the Passmore Edwards Museum of the Essex Field Club on October 18, the Countess of Warwick made the following statement with respect to local museums:—"I am convinced that museums are destined to play such an important part in education in the future that no town of any importance will be able to be without an institution of this kind. But one of the chief reasons why this part of the club's work has not hitherto been practically realised is because the establishment and maintenance of a museum requires considerable financial resources. However zealous the members of a county natural history society may be, their aims and objects rarely rouse popular enthusiasm to the extent of raising an adequate fund for such purposes. In some counties private munificence had compensated for the lack of public interest. In other cases—and I am glad to be able to quote as an example another Essex town, Colchester—an enlightened Town Council has enabled a local museum to find an appropriate home. And again, in other instances, some of the County Councils have given financial aid from the Technical Instruction Grant, quite a legitimate expenditure as it appears to me, and, if I may express a personal opinion, a most valuable way of assisting in the spread of that knowledge which is the core an essence of all sound scientific education—a knowledge of nature at first hand as distinguished from the knowledge imparted through books or didactically taught in the class-room. But I am afraid that we as a nation have hardly yet risen to that high-water mark of scientific culture which should characterise a great civilisation. I do not mean to imply that we are lacking in scientific ability, that we are devoid of originality, or that we have failed to contribute our share of knowledge to the sum total of human progress. But I fear that the *spirit of modern science* has not sunk into the public mind—it has not permeated the rank and file to that extent which is required by the age in which we live, the century of science *par excellence*. Our purses are ever open, and have always been opened, in the names of charity and philanthropy, religious endowment and missionary enterprise, political organisation and popular sports. But science, upon which the national welfare and our position in the scale of nations ultimately depends, has to go begging for her tens, while thousands are forthcoming for these other objects." These remarks, which were received with loud applause by the audience at West Ham to whom they were addressed, coming from the mouth of a lady who has set such a brilliant example by her pioneering work in rural education, should be productive of good throughout the country. Most cordially will our readers endorse Lady Warwick's sentiments.

SCIENTIFIC SERIALS.

THE *Journal of the Royal Microscopical Society* for October contains a further instalment of Mr. F. W. Millett's paper on recent Foraminifera of the Malay Archipelago; a short article on a new projection eye-piece and an improved polarising eye-piece, by Mr. E. B. Stringer; and the conclusion of Mr. E. M. Nelson's note on the microscopes of Powell, Ross, and Smith, the present instalment dealing with the instruments of